



**LARGE CAN TYPE ALUMINUM ELECTROLYTIC CAPACITORS USR**

**USR SERIES**

Previous Series

**85°C Standard, Snap-in Terminal Type**

**◆FEATURES**

- Load Life : 85°C 3000 hours.
- Smaller size with higher ripple current endurance than USP series.



**◆SPECIFICATIONS**

Items	Characteristics																							
Category Temperature Range	-40~+85°C	-25~+85°C																						
Rated Voltage Range	10~250V.DC	315~450V.DC																						
Capacitance Tolerance	±20% (20°C, 120Hz)																							
Leakage Current(MAX)	$I=3\sqrt{CV}$ (After 5 minutes application of rated voltage) $I$ =Leakage Current(μA) $V$ =Rated Voltage(V) $C$ =Rated Capacitance(μF)																							
Dissipation Factor(MAX)	<table border="1"> <thead> <tr> <th>Rated Voltage(V)</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> <th>160~400</th> <th>420~450</th> </tr> </thead> <tbody> <tr> <td>tan δ</td> <td>0.55</td> <td>0.50</td> <td>0.45</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> <td>0.25</td> </tr> </tbody> </table> (20°C, 120Hz)		Rated Voltage(V)	10	16	25	35	50	63	80	100	160~400	420~450	tan δ	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.25
Rated Voltage(V)	10	16	25	35	50	63	80	100	160~400	420~450														
tan δ	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.25														
Impedance Ratio(MAX)	<table border="1"> <thead> <tr> <th>Rated Voltage(V)</th> <th>10~250</th> <th>315~400</th> <th>420~450</th> </tr> </thead> <tbody> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>3</td> <td>4</td> <td>12</td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</td> <td>12</td> <td></td> <td></td> </tr> </tbody> </table> (120Hz)		Rated Voltage(V)	10~250	315~400	420~450	Z(-25°C)/Z(20°C)	3	4	12	Z(-40°C)/Z(20°C)	12												
Rated Voltage(V)	10~250	315~400	420~450																					
Z(-25°C)/Z(20°C)	3	4	12																					
Z(-40°C)/Z(20°C)	12																							
Endurance	After applying rated voltage with rated ripple current for 3000hrs at 85°C, the capacitors shall meet the following requirements. <table border="1"> <tbody> <tr> <td>Capacitance Change</td> <td>Within ±20% of the initial value.</td> </tr> <tr> <td>Dissipation Factor</td> <td>Not more than 200% of the specified value.</td> </tr> <tr> <td>Leakage Current</td> <td>Not more than the specified value.</td> </tr> </tbody> </table>		Capacitance Change	Within ±20% of the initial value.	Dissipation Factor	Not more than 200% of the specified value.	Leakage Current	Not more than the specified value.																
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**◆MULTIPLIER FOR RIPPLE CURRENT**

Frequency coefficient

Frequency (Hz)		60(50)	120	500	1k	10k≤
Coefficient	10~100WV	0.90	1.00	1.05	1.10	1.15
	160~250WV	0.80	1.00	1.20	1.30	1.50
	315~450WV	0.80	1.00	1.05	1.10	1.15

**◆PART NUMBER**

   **USR**                **OOE**         **DXL**  
 Rated Voltage    Series    Rated Capacitance    Capacitance Tolerance    Option    Terminal Code    Case Size

**◆Option**

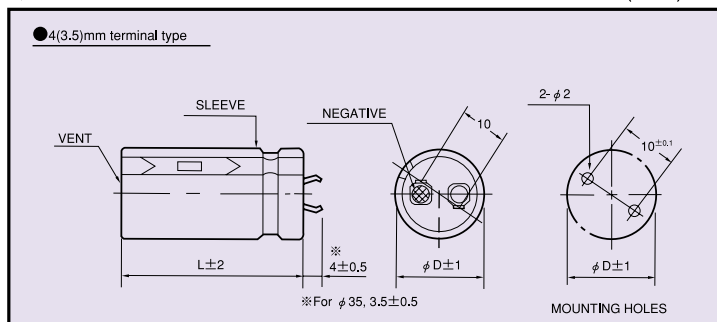
	Code
without plate	OOE
with plate	Blank



**LARGE CAN TYPE ALUMINUM ELECTROLYTIC CAPACITORS**    **USR**

◆ **DIMENSIONS**

(mm)



◆ **STANDARD SIZE, RATED RIPPLE CURRENT**

Cap ( $\mu F$ )	WV $\phi D$	10					16				
		$\phi 20$	$\phi 22$	$\phi 25$	$\phi 30$	$\phi 35$	$\phi 20$	$\phi 22$	$\phi 25$	$\phi 30$	$\phi 35$
6800							20×25; 2.33				
8200							20×30; 2.56	22×25; 2.56			
10000		20×25; 2.22					20×35; 2.85	22×30; 2.81			
12000		20×30; 2.44	22×25; 2.41				20×40; 3.20	22×30; 3.13	25×25; 2.96		
15000		20×35; 2.90	22×30; 2.88	25×25; 2.88				22×35; 3.69	25×30; 3.64	30×25; 3.73	
18000		20×40; 3.31	22×35; 3.22	25×30; 3.08				22×40; 3.98	25×35; 3.98	30×30; 3.88	
22000			22×40; 3.79	25×30; 3.66	30×25; 3.53			22×50; 4.52	25×40; 4.44	30×30; 4.38	
27000			22×45; 4.04	25×35; 4.04	30×30; 3.99				25×45; 4.98	30×35; 4.82	35×30; 4.82
33000			22×50; 4.58	25×40; 4.56	30×30; 4.58				25×50; 5.49	30×40; 5.38	35×35; 5.33
39000				25×45; 5.29	30×35; 5.21	35×30; 5.05				30×45; 6.11	35×35; 6.01
47000				25×50; 5.78	30×40; 5.78	35×35; 5.55				30×50; 6.80	35×40; 6.80
56000					30×45; 6.59	35×35; 6.40					35×45; 7.62
68000					30×50; 7.50	35×40; 7.48					
82000						35×50; 8.50					

Cap ( $\mu F$ )	WV $\phi D$	25					35				
		$\phi 20$	$\phi 22$	$\phi 25$	$\phi 30$	$\phi 35$	$\phi 20$	$\phi 22$	$\phi 25$	$\phi 30$	$\phi 35$
2700							20×25; 1.76				
3300							20×30; 2.14				
3900							20×30; 2.28	22×25; 2.22			
4700		20×25; 2.18					20×35; 2.46	22×30; 2.46	25×25; 2.43		
5600		20×30; 2.33	22×25; 2.31					22×35; 2.79	25×30; 2.75		
6800		20×35; 2.56	22×30; 2.56					22×40; 2.89	25×30; 2.89	30×25; 3.09	
8200		20×40; 2.91	22×35; 2.81	25×25; 2.78				22×45; 3.47	25×35; 3.33	30×30; 3.29	
10000			22×35; 3.18	25×30; 3.16				22×50; 3.59	25×40; 3.59	30×30; 3.61	
12000			22×40; 3.53	25×35; 3.48	30×25; 3.53				25×45; 4.01	30×35; 4.01	35×30; 4.02
15000			22×50; 4.08	25×40; 4.00	30×30; 4.00					30×40; 4.80	35×35; 4.80
18000				25×45; 4.68	30×35; 4.66	35×30; 4.68				30×45; 5.18	35×40; 5.71
22000					30×40; 5.19	35×35; 5.20					35×45; 6.38
27000					30×45; 6.02	35×40; 6.02					35×50; 6.90
33000						35×45; 6.75					
39000						35×50; 7.56					

Cap ( $\mu F$ )	WV $\phi D$	50					63				
		$\phi 20$	$\phi 22$	$\phi 25$	$\phi 30$	$\phi 35$	$\phi 20$	$\phi 22$	$\phi 25$	$\phi 30$	$\phi 35$
1500							20×25; 1.69				
1800		20×25; 1.70					20×30; 2.04	22×25; 1.90			
2200		20×30; 2.07	22×25; 1.93				20×35; 2.40	22×30; 2.35	25×25; 2.30		
2700		20×35; 2.21	22×30; 2.21				20×40; 2.52	22×35; 2.50	25×30; 2.49		
3300		20×40; 2.41	22×30; 2.41	25×25; 2.38				22×40; 2.69	25×30; 2.69	30×25; 2.78	
3900			22×35; 2.72	25×30; 2.68				22×45; 3.10	25×35; 3.09	30×30; 3.09	
4700			22×40; 3.01	25×30; 3.03	30×25; 3.01			22×50; 3.49	25×40; 3.37	30×30; 3.37	
5600			22×45; 3.43	25×35; 3.37	30×30; 3.43				25×45; 3.80	30×35; 3.81	35×30; 3.75
6800			22×50; 3.94	25×40; 3.87	30×35; 3.87				25×50; 4.41	30×40; 4.41	35×35; 4.33
8200				25×45; 4.37	30×35; 4.42	35×30; 4.41				30×45; 4.90	35×35; 4.80
10000					30×40; 5.02	35×35; 4.92				30×50; 5.49	35×40; 5.47
12000					30×50; 5.60	35×40; 5.60					35×50; 6.30
15000						35×45; 6.44					
18000						35×50; 6.71					

↑ Ripple Current A r.m.s./120Hz-85°C  
Case Size  $\phi D \pm 1 \times L \pm 2$ (mm)



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◆ **STANDARD SIZE, RATED RIPPLE CURRENT**

Cap ( $\mu$ F)	WV $\phi$ D	80					100				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
680							20×25; 1.66				
820							20×30; 1.85	22×25; 1.86			
1000		20×25; 1.56					20×35; 2.02	22×30; 2.02			
1200		20×30; 1.80	22×25; 1.77				20×40; 2.12	22×30; 2.12	25×25; 2.10		
1500		20×35; 2.10	22×30; 2.01					22×35; 2.45	25×30; 2.43		
1800		20×40; 2.30	22×35; 2.25	25×25; 2.26				22×40; 2.77	25×35; 2.77	30×25; 2.65	
2200			22×40; 2.53	25×30; 2.53	30×25; 2.50			22×45; 3.12	25×40; 3.20	30×30; 3.10	
2700			22×45; 2.93	25×35; 2.93	30×30; 2.91				25×45; 3.61	30×35; 3.60	35×30; 3.71
3300			22×50; 3.25	25×40; 3.25	30×30; 3.23				25×50; 4.06	30×40; 4.05	35×35; 4.07
3900				25×45; 3.62	30×35; 3.62					30×45; 4.60	35×35; 4.50
4700				25×50; 4.28	30×40; 4.15	35×30; 4.10				30×50; 5.13	35×40; 5.12
5600					30×45; 4.55	35×35; 4.51					35×45; 5.75
6800					30×50; 5.18	35×40; 5.14					35×50; 6.01
8200						35×45; 5.83					

Cap ( $\mu$ F)	WV $\phi$ D	160					180				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
270		20×25; 1.22					20×25; 1.23				
330		20×30; 1.48					20×30; 1.48	22×25; 1.42			
390		20×30; 1.55	22×25; 1.55				20×30; 1.58	22×30; 1.61			
470		20×35; 1.81	22×30; 1.77	25×25; 1.77			20×35; 1.82	22×30; 1.80	25×25; 1.80		
560		20×40; 2.04	22×35; 2.05	25×30; 2.05			20×40; 2.04	22×35; 2.09	25×30; 2.05		
680			22×40; 2.24	25×30; 2.22	30×25; 2.22			22×40; 2.36	25×35; 2.34	30×25; 2.27	
820			22×45; 2.55	25×35; 2.52	30×30; 2.51			22×45; 2.72	25×35; 2.58	30×30; 2.56	
1000			22×50; 2.88	25×40; 2.86	30×30; 2.82				25×45; 2.91	30×35; 2.95	
1200				25×45; 3.27	30×35; 3.25	35×30; 3.24			25×50; 3.46	30×40; 3.38	35×30; 3.32
1500					30×40; 3.77	35×35; 3.75				30×45; 3.90	35×35; 3.83
1800					30×45; 4.10	35×35; 4.08				30×50; 4.33	35×40; 4.32
2200						35×45; 4.72					35×45; 4.60
2700						35×50; 5.30					35×50; 5.05

Cap ( $\mu$ F)	WV $\phi$ D	200					220				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
180							20×25; 1.09				
220		20×25; 1.13					20×30; 1.15	22×25; 1.09			
270		20×30; 1.32	22×25; 1.30				20×30; 1.38	22×25; 1.31			
330		20×30; 1.49	22×25; 1.44				20×35; 1.51	22×30; 1.58	25×25; 1.49		
390		20×35; 1.66	22×30; 1.65	25×25; 1.63			20×40; 1.73	22×35; 1.69	25×30; 1.71		
470		20×40; 1.93	22×35; 1.88	25×30; 1.86				22×40; 1.99	25×30; 1.95	30×25; 1.89	
560			22×40; 2.08	25×30; 2.05	30×25; 2.05			22×45; 2.28	25×35; 2.22	30×30; 2.19	
680			22×45; 2.36	25×35; 2.36	30×30; 2.36			22×50; 2.46	25×40; 2.40	30×30; 2.39	
820			22×50; 2.68	25×40; 2.66	30×30; 2.62				25×45; 2.81	30×35; 2.70	35×30; 2.62
1000				25×45; 3.12	30×35; 3.00	35×30; 2.96			25×50; 3.13	30×40; 3.08	35×35; 3.05
1200				25×50; 3.44	30×40; 3.44	35×35; 3.40				30×45; 3.60	35×40; 3.51
1500					30×50; 3.93	35×40; 3.87					35×45; 3.92
1800						35×45; 4.37					
2200						35×50; 5.00					

Cap ( $\mu$ F)	WV $\phi$ D	250					315				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
120											
150							20×30; 0.95				
180		20×25; 1.14					20×35; 1.08	22×30; 1.23	25×25; 1.31		
220		20×30; 1.20	22×25; 1.18				20×40; 1.23	22×35; 1.34	25×30; 1.40		
270		20×30; 1.35	22×30; 1.43					22×40; 1.60	25×30; 1.62		
330		20×35; 1.60	22×30; 1.58	25×25; 1.53				22×45; 1.82	25×35; 1.85	30×30; 1.89	
390		20×40; 1.83	22×35; 1.79	25×30; 1.79				22×50; 1.97	25×40; 2.01	30×30; 2.05	
470			22×40; 2.05	25×35; 2.05	30×25; 1.94				25×45; 2.20	30×35; 2.27	35×30; 2.25
560			22×45; 2.36	25×35; 2.24	30×30; 2.24					30×40; 2.50	35×35; 2.56
680				25×40; 2.54	30×35; 2.58					30×45; 2.67	35×40; 2.90
820				25×50; 2.87	30×35; 2.84	35×30; 2.82				30×50; 3.12	35×45; 3.29
1000					30×45; 3.39	35×35; 3.31					35×50; 3.40
1200					30×50; 3.80	35×40; 3.66					
1500						35×45; 4.12					
1800						35×50; 4.31					

↑ Ripple Current A r.m.s./120Hz-85°C  
 Case Size  $\phi$  D<sup>±1</sup> × L<sup>±2</sup>(mm)



**LARGE CAN TYPE ALUMINUM ELECTROLYTIC CAPACITORS    USR**

◆ **STANDARD SIZE, RATED RIPPLE CURRENT**

Cap ( $\mu$ F)	WV $\phi$ D	350					385				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
68							20×25; 0.60				
82							20×30; 0.67	22×25; 0.70			
100							20×30; 0.80	22×30; 0.82			
120		20×30; 0.91	22×25; 0.99				20×35; 0.89	22×30; 0.91	25×25; 0.95		
150		20×35; 1.05	22×30; 1.14	25×25; 1.16			20×40; 1.05	22×35; 1.04	25×30; 1.08		
180		20×40; 1.18	22×35; 1.28	25×30; 1.30				22×40; 1.18	25×35; 1.20	30×25; 1.28	
220			22×40; 1.40	25×35; 1.46	30×25; 1.47			22×45; 1.33	25×35; 1.44	30×30; 1.40	
270			22×45; 1.62	25×35; 1.65	30×30; 1.71				25×40; 1.56	30×35; 1.62	
330			22×50; 1.78	25×40; 1.88	30×35; 1.93				25×50; 1.80	30×40; 1.85	35×30; 1.85
390				25×45; 2.04	30×35; 2.12	35×30; 2.19				30×40; 2.04	35×35; 2.06
470					30×40; 2.41	35×35; 2.43				30×50; 2.27	35×40; 2.30
560					30×45; 2.60	35×35; 2.62					35×45; 2.57
680						35×40; 3.00					35×50; 2.80
820						35×50; 3.30					

Cap ( $\mu$ F)	WV $\phi$ D	400					420				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
68		20×25; 0.71					20×25; 0.65				
82		20×30; 0.78	22×25; 0.80				20×30; 0.73	22×25; 0.75			
100		20×30; 0.90	22×30; 0.94				20×35; 0.85	22×30; 0.87	25×25; 0.92		
120		20×35; 1.02	22×30; 1.04	25×25; 1.08			20×35; 0.99	22×30; 1.01	25×25; 1.03		
150		20×40; 1.16	22×35; 1.18	25×30; 1.21			20×45; 1.15	22×35; 1.19	25×30; 1.19	30×25; 1.14	
180			22×40; 1.34	25×35; 1.37	30×25; 1.45			22×45; 1.36	25×35; 1.37	30×25; 1.35	
220			22×45; 1.50	25×35; 1.56	30×30; 1.58			22×50; 1.69	25×40; 1.58	30×30; 1.56	
270				25×40; 1.70	30×35; 1.73				25×45; 1.83	30×35; 1.72	35×30; 1.76
330				25×50; 1.90	30×40; 1.95	35×30; 1.95			25×50; 2.18	30×40; 1.98	35×35; 2.04
390					30×40; 2.15	35×35; 2.17				30×45; 2.34	35×35; 2.26
470					30×50; 2.39	35×40; 2.42				30×50; 2.67	35×40; 2.60
560						35×45; 2.71					35×45; 2.93
680						35×50; 2.95					

Cap ( $\mu$ F)	WV $\phi$ D	450				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
56		20×25; 0.58				
68		20×30; 0.67	22×25; 0.68			
82		20×35; 0.76	22×30; 0.82			
100		20×35; 0.84	22×35; 0.90	25×25; 0.92		
120		20×40; 0.94	22×35; 1.02	25×30; 1.04	30×25; 1.07	
150			22×40; 1.12	25×35; 1.19	30×30; 1.23	
180			22×50; 1.26	25×40; 1.33	30×30; 1.38	
220				25×45; 1.51	30×35; 1.56	35×30; 1.58
270				25×50; 1.65	30×40; 1.80	35×35; 1.81
330					30×45; 2.02	35×35; 2.05
390					30×50; 2.24	35×40; 2.27
470						35×45; 2.55

↑ Ripple Current A r.m.s./120Hz-85°C  
 Case Size  $\phi$  D<sup>±1</sup>×L<sup>±2</sup>(mm)